

PROCEEDINGS
OF
THE ROYAL SOCIETY.

1831-1832.

No. 10.

May 3, 1832. (Continued.)

JOHN BOSTOCK, M.D. Vice President, in the Chair.

A Paper was read, entitled, "An Account of certain new Facts and Observations on the Production of Steam," by Jacob Perkins, Esq. Communicated by Ralph Watson, Esq. F.R.S.

Having observed that water on the surface of melted iron was very slowly affected by the heat, although it exploded violently when the same fused metal was dropped into it, the author made a series of experiments on the time required for the evaporation of the same quantity of water successively poured into a massive iron cup, at first raised to a white heat, and then gradually cooled by the addition and evaporation of the water. The first measures of water were longer in being evaporated than those subsequently added, in consequence of the reduction in the temperature of the iron, until this temperature reached what the author calls the *evaporating point*, when the water was suddenly thrown off in a dense cloud of steam. Below this temperature, the time required for the complete evaporation of the same measure of water became longer in proportion as the iron was cooler, until it fell below the boiling point. The author accounts for these results from the circumstance that when the metal is at the higher temperatures, the water placed on its surface is removed from contact with it by a stratum of interposed steam. From these and other experiments, he is led to infer the necessity of keeping water in close and constant contact with the heated metal in which it is contained, in order to obtain from it, in the shortest time, the greatest quantity of steam.

The reading of a Paper, entitled, "On certain Irregularities in the Magnetic Needle, produced by partial warmth, and the relations which appear to subsist between terrestrial Magnetism and the geological Structure and thermo-electrical Currents of the Earth," by Robert Were Fox, Esq. Communicated by Davies Gilbert, Esq. V.P.R.S.—was commenced.

May 10, 1832.

JOHN WILLIAM LUBBOCK, Esq. M.A., V.P. and Treasurer,
in the Chair.

The reading of Mr. Fox's Paper was resumed and concluded.